



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,849	07/25/2003	Yann Frignac	Q76586	1888

23373 7590 09/14/2006
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

JEAN BART, RALPH

ART UNIT PAPER NUMBER

2631

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/626,849	Applicant(s) FRIGNAC ET AL.	
	Examiner Ralph Jean-Bart	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/25/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

Drawing Objections

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because figure 5 is in the drawings and never referenced. Then, figures 5a and 5b are referenced in the specification but do not appear in the list of drawings. Further, the unit for the wavelength of figure 4 should be nanometer and not millimeter as indicated in the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Objections

The disclosure is objected to because of the following informalities: Page 7, line 20 introduces "a index" should be changed to - - **an index** - -. Appropriate correction is required.

Claim 1 is objected to because of the following informalities: The applicant is using the word "*comprising with*" is idiomatically incorrect. Appropriate correction is required.

With respect to claim 3, the word "*each others*" is grammatically incorrect. Correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "**about 15 GHz**" in claim 3 is a relative term which renders the claim indefinite. The term "**about 15 GHz**" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. . For the purpose of applying art the examiner interprets about 15 GHz to be any value more than or less than 15 GHz, or 15 GHz exactly.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onaka et al. (U.S. 5,696,859) in view of Willner et al (U.S.Pub No 2003/0123884).

With respect to claim 1, Onaka teaches Optical transmission system with a transmitter function (see abstract; figure 1, transmission light source unit 68#1-68#n), a transmission line (see figure 1, optical transmission line 6; column 5 lines 65-66) and a receiver (see figure 3 element 22; column 6 lines 58-61) function where each channel has its optical spectrum truncated by a filter function (see figure 6, band-pass filter 18; column 10 lines 6-12) according to a vestigial side-band method (see abstract), the transmitter function comprising with modulators (see figure 25, optical modulators 148) and a wavelength multiplexer for either equidistant or non-equidistant channel spacing (see figure 8, transmission light source units 68 and figure 25 optical star coupler 70), the receiver function comprising a wavelength demultiplexer (see figure 15 optical tree coupler 106), electrical receivers (see figure 15 receivers 108), the filter function comprising a first filter and a second filter (see figure 17 filters 130 and 132) having a transmission response with maximum transmission at the central wavelength of the channel (see figure 17 stable point SP) and the first filter has a transmission response

Art Unit: 2192

with maximum transmission in the relevant sideband of said WDM channel (see column 16 lines 28-36). Onaka fails to teach the filters are tunable and a vestigial sideband method.

However, Willner teaches the filters are tunable (see figure 5 elements 512 and 522; paragraph 0030), a vestigial sideband (paragraph 0030)

Therefore, it whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Optical Filter Array of Onaka by incorporating a tunable filter and a vestigial sideband in an optical medium in order to control or manage the effects of the optical dispersion as taught by Willner (see Willner paragraph 0005).

With respect to claim 2, Onaka teaches changes of the maximum distance between the filters (see figure 20 filter elements 132' and 132; column 16 lines 28-36).

However, Willner teaches the two filters are tunable, see above discussion with respect to claim 1. The motivation for using a tunable filter has been discussed in claim 1 above.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Optical Filter Array of Onaka by incorporating two tunable filters with changes of the maximum distance between them so that "the optical dispersion does not change substantially during the period between the two filtering operations so that the phase difference between the two filtered signals reflects the phase change caused

by the chromatic dispersion due to the frequency difference in the two filtered optical signals” as taught by Willner (see Willner paragraph 0025).

With respect to claim 3, Onaka teaches the transmission maxima of the first and the second filter is about 125 GHZ and is equivalent to about 15 GHZ (see column 21 lines 1-8).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onaka et al. (U.S. 5,696,859) and Willner et al (U.S. pub 2003/0123884) as applied to claim 1, above and further in view of Byron (U.S. 5,638,473).

With respect to claim 4, Onaka and Willner teach all the limitations of claim 1. They fail to teach the first and the second filter are fiber Bragg grating filters with a common support device.

However, Byron teaches the first and the second filter are fiber Bragg grating filters (see figure 3 Bragg grating 3,4, and 5 with a common support device (see figure 3 fused coupler 60)).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Optical Filter Array of Onaka and the Monitoring Optical Dispersion of Willner by incorporating a fiber Bragg grating filters in order to separate wanted signal from spontaneous emission noise as taught by Byron (see Byron column 1 line 63 – column 2 line 5).

Art Unit: 2192

Claim 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onaka et al. (U.S. 5,696,859) and Willner et al (U.S. pub 2003/0123884) as applied to claim 1, above and further in view of LoCascio (U.S. pub 2004/0033020).

With respect to claim 5 and 6, Onaka and Willner teach all the limitations of claim 1. They fail to teach the first and the second filter are Fabry Perot Filters with respect to claim 5, the first and the second filter are structure in planar lightwave circuit with respect to claim 6.

However, LoCascio teaches the first and the second filter are Fabry Perot Filters (see figure 4 Fabry- Perot 102, 104..etc.), the first and the second filter are structure in planar lightwave circuit (see paragraph 0018).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Optical Filter Array of Onaka and the Monitoring Optical Dispersion of Willner by incorporating a Fabry Perot Filters as a planar lightwave circuit in order to allow for a single wavelength channel to be transmitted while reflected at other wavelengths within a predefined wavelength region as taught by LoCascio (see LoCascio paragraph 0015)

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al. (U.S. Pub. No 2003/0002112) in view of Onaka et al (U.S. 5,696,859).

Art Unit: 2192

With respect to claim 7, Hirano teaches transmitting coded optical signals over a transmission line (see figure 11 elements 12 and 3) Demultiplexing the WDM channel wavelengths Filtering the sideband of the channel wavelengths (see figure 12 element 33), Filtering with two parallel aligned filters where the first filter is filtering the sideband and the second filter is filtering the carrier wavelength (see figure 12 elements 26-1-26-2), maintaining the distance between the maxima of the two filters (see figure 7B). Hirano fails to teach adjusting the second filter exactly on the channel wavelength by a feed back loop.

However, Onaka teaches adjusting the second filter exactly on the channel wavelength by a feed back loop (see figure 15 second filter elements 118' and optical receivers 22').

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the High Precision Chromatic Dispersion of Hirano by incorporating the second filter exactly on the channel wavelength by a feed back loop in order to avoid the effects of cross talk on the receiver side and further, and further to avoid effects of the light source on signal lights generated by other signal sources, and making it easy to keep the wavelength interval among channel at a fix value as taught by Onaka (see Onaka column 4 lines 1-18).

Conclusion

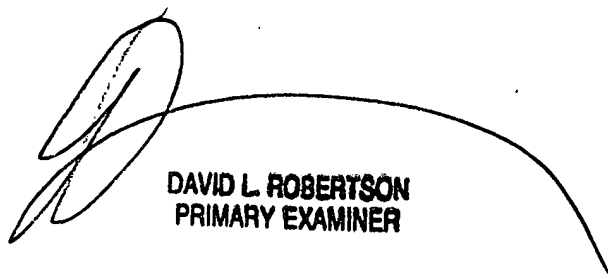
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ralph Jean-Bart whose telephone number is (571) 270-1017. The examiner can normally be reached on Monday to Thursday from 8 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Robertson, can be reached on 571-272-4186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJB
Ralph Jean-Bart

08/28/2006



DAVID L. ROBERTSON
PRIMARY EXAMINER